more so in 1761. Such observations were then wanting. Hence the application of this method was not successful, and results of that transit were unsatisfactory.

Not daunted by the comparative failure of that attempt, the astronomers of last century made vigorous efforts to make the transit of 1761 successful. The transit of 1761 was utilised in so far as it pointed out the difficulties in this kind of observation and gave them an approximate value of the sun's parallax to help them in choosing the most advantageous stations from which to observe the next transit.

Halley had no conception, when he proposed this kind of observation, of the difficulties attending it. The difficulty chiefly consists in determining accurately the exact instant when the contact seems to take place. The values which have been deduced from the observations of last century, and especially of the year 1761, have varied considerably according to the mode of reducing the observations. Thus in 1761 Lalande * found, from the observations of Pingré, 9″·4 for the solar parallax, while Maskelyne found from the work of Mason and Dixon 8″·6; Short † made it 8″·65; Wargentin, 8″·1 to 8″·3. Encke ‡ showed that the differences were partly due to an error in the longitude of Rodriguez. This question will be capable of further discussion after this year, as Rodriguez is one of the stations chosen by the English from which to observe the coming transit.

Since the observers are likely to differ considerably in the manner in which they observe the contact, and since it is difficult for us to be sure that all observers have really actually noted the same phenomenon, photography is once more brought to our aid. Some time ago M. Janssen proposed a method for determining by the aid of photography the exact instant of contact. The value of his method was immediately recognised, and steps have been taken to utilise it. The method consists essentially in exposing different parts of a prepared photographic plate in succession to the sun's light, so as to photograph that portion of the sun's limb at which the planet is visible. By the aid of no very complicated mechanism a circular plate is so arranged that sixty different portions of its surface near the circumference are successively brought into position, and exposed to the action of the sun's rays. The plate completes a revolution once in a minute, so that sixty photographs are taken at intervals of one second. A person who is observing with a telescope can easily give a signal to commence these photographic operations at the proper time. Thus one of the photographs will be sure to give us an indication of the time of true contact. Furthermore each one of the photographs taken at one station can be compared with a corresponding one taken at another station, so as to give us a means of deducing the sun's parallax. The advantages of this method are enormous. The uncertainty which exists with respect to eye observations is in a great measure due to fluctuations arising from tremors in the instruments, and variations in the density of the intervening air. In the photographic method, means have been taken to avoid these tremors as far as possible; and the instantaneous manner in which the photographs are taken will reduce these uncertainties to a minimum.

Various suggestions have been made as to the possibility of observing the exact time of the external contact by using a spectroscope in a beautiful manner originally executed by Mr. Lockyer and M. Janssen for observing the solar protuberances. Father Secchi has, in a very able memoir, pointed out a way by means of which this can be done; M. Zöllner has likewise pointed out the advantages of this method.

The observation of external contact is doubtless very useful as supplementary to the internal contact. The chief difficulty consists in the uncertainty of fixing the telescope in the proper position, so as catch the exact point of the sun's limb. This difficulty would certainly be to a large extent obviated by the employment of the ingenious adjustible ring-slit devised by Mr. Lockyer. This device has, we believe, been fully tested, with satisfactory results. It is much to be regretted that more observations to test its utility have not been made; as on this account it is not likely to be employed in the coming transit.

We have now completed the geometrical examination of the nature of the observations on the transit of Venus, by means of which the sun's parallax will be deduced. The complete examination of the question, including analytical methods, cannot be here dwelt upon. Anyone who is interested in this should consult the valuable work "Les passages de Vénus sur le disque Solaire," by M. Edmond du Bois, lately published, in which the theoretical part of the question is very fully investigated.

RECAPITULATION.—Before leaving the technical view of the matter it will be well to recapitulate what has hitherto been stated.

1. We know the *relative dimensions* of the solar system accurately; but we do not know the *scale*.

2. The determination of the distance of the earth from the sun or from any of the planets, at a fixed date, fixes the scale.

3. This may be determined (1) by the aid of a transit of Venus; (2) by an opposition of Mars; (3) by a knowledge of the velocity of light combined with observations of eclipses of Jupiter's satellites; (4) by the velocity of light and the constant of aberration; (5) by the calculated effects of the sun's disturbance upon the lunar motions.

4. A transit of Venus may be utilised:—
   (*a*) By the determination of times of contact at different stations, combined with a knowledge of the longitudes of these stations.
   (*β*) By determining the least distance between the centres of the sun and Venus during the transit, observed from different stations.

5. This last determination may be made by either of these methods:—
   (1) The Photographic Method.
   (2) The Heliometric Method.
   (3) The Method of Durations.

GEORGE FORBES

NOTES

THE Board of Trinity College, Dublin, have appointed R. Ball, LL.D., F.R.S., to be Royal Astronomer of Ireland, on the foundation of Dr. Andrews. The announcement of this appointment will be received with every satisfaction, as Dr. Ball has already, while acting as assistant to Lord Rosse, distinguished himself as a practical observer. We feel sure he will not forget to profit, or omit to allow astronomical science to profit too, by the excellently appointed observatory at his command. This vacates the chair of Applied Mathematics in the Royal College of Science, Dublin.

AT a meeting of the donors of the Yorkshire College of Science (see NATURE, vol. ix. p. 157) held at Leeds last Thursday, the constitution of the College was agreed upon, and a board of governors elected. The sum required to establish a College of Science in any way worthy of Yorkshire would be 60,000*l*., of which only about 25,000*l*. has as yet been collected. With this sum, however, we are glad to see that it has been resolved to make a start, and we have no doubt that when the practical benefits of the institution become evident there will be little difficulty from lack of funds We trust with Lord F. Cavendish that, ere long, the institution just organised will occupy in Yorkshire a position similar to that occupied by Owens College in Lancashire. Several speakers referred to the fact that in the practical applications of Science Britain is being distanced by Germany and other countries, and that the only means by which we can hope to compete with foreign rivals is the spread of scientific education. It is hoped that, before the close of the year, a staff of thoroughly competent professors will be giving their lectures in Leeds.

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* Phil. Trans., vol. lii., p. 647.

† *Ibid.*, p. 648.

‡ Zach. Corresp. ii., 1810, p. 367.

THE annual general meeting of the Iron and Steel Institute commenced yesterday in the rooms of the Institution of Civil Engineers, under the presidency of Mr. Lowthian Bell, F.R.S.

THE Port Louis *Overland Commercial Gazette* (Mauritius) of April 4 contains the report of a violent cyclone which embraced Mauritius in its sweep on March 27 and 28. Indications of the approaching hurricane were observed on the 22nd in a falling barometer and a gradually rising wind, which increased until it reached its height on the two days mentioned. Its greatest force was 11 (Beaufort scale), and the barometer sank as low as 28·566 at 3.30 P.M. on the 28th. The mischief done to the growing canes was not nearly so great as was anticipated, though in several places considerable damage has been sustained. Shops in many parts of Port Louis were closed, and on the 27th two of the local newspapers did not appear. The town itself presented a very sad appearance after the storm was over, the roofs and *débris* of fallen houses and dependencies, and broken trees innumerable, partially obstructing all but the main streets. The cellars of a great many houses were inundated, and a certain amount of valuable goods has been destroyed. There were very few houses in the upper part of the town but were more or less injured; verandahs, kitchens, stables, gates, palings, and such like light constructions having been blown down by the hundreds. The museum at the Royal College was unroofed, but the curiosities it contained have received no damage. The suburbs of the town were devastated, most of the smaller wooden houses, huts, and camps having disappeared. As was unfortunately to be expected, many lives were lost.

THE Royal Academy of Belgium proposes the following subjects for prizes to be awarded in 1875:—(1) To examine and discuss on the basis of new experiments, the perturbing causes which influence the determination of the electromotive force and the internal resistance of an element of the electric pile: to estimate in numbers these two quantities for some of the principal piles. (2) To show the present state of our knowledge on the relations of heat to the development of phanerogamous plants, particularly in respect to the periodic phenomena of vegetation; and, in this connection, to discuss the value of dynamical influence and of solar heat upon the evolution of plants. (3) To make experiments on the development of the *Tunicata*. (4) To show by new researches the composition and relations of albumenoid substances. (5) To describe the coal system of the basin of Liége. Each prize consists of a gold medal, of the value of 1,000 francs for subjects (4) and (5), and of 600 francs for the first three subjects. The papers may be written in Latin, French, or German, and must be sent to the Secretary of the Academy before August 1, 1875.

ON Saturday last the extensive works for the manufacture of telegraphic cables, belonging to the Messrs. Siemens, at Charlton, were thrown open to a select party of visitors, among whom were Lord Bury, Lord Rosse, Baron de Reuter, Professors Abel, Maxwell, Odling, Tyndall, and Williamson, Sir Charles Wheatstone, Mr. C. F. Varley, and Messrs. Culley and Preece, of the Engineering Department of the Postal Telegraph Service. These works comprise nearly every branch of telegraphic manufacture, but public interest becomes mainly centred on that part of the operations connected with the manufacture of submarine cables. The *Faraday*—the new ship to be employed in laying the direct United States cable, and the property of Messrs. Siemens— is undoubtedly a novelty in cable ships. It is an iron ship of 5,000 tons register, but equal to carrying a gross burden of nearly 6,500 tons. She is 360 ft. long, 37 ft. deep, and has a breadth of beam of 52 ft. Her capacity for cable storage is immense, consisting of three tanks, two of which are 45 ft. in diameter, the other 37 ft. in diameter, and each 27 ft. deep. Five thousand tons of cable can be thus stowed away, and it is calculated that this will be equal to about 1,500 miles of the cable, which is now being taken on board.

MR. HENRY WILLETT, F.G.S., has published another letter in reference to the Sub-Wealden Exploration. He says:—"We have now run through about 400 ft. of Kimmeridge clay. Nearly every inch contains numerous fossil shells in various stages of growth, each of which has been born, has grown, and died. Our little 2-inch column has contained several thousands. There is no reason to doubt that this bed of clay extends uninterruptedly beneath Brighton, Chichester, Southampton, Sussex, Hampshire, and Dorsetshire, to Kimmeridge on the west, and beneath Hastings and the English Channel to the Boulonnais district in France, and that throughout the whole of this vast area, the same conditions of birth, life, and death have existed."

A TELEGRAM from Aden to Vienna announces the death of Richard Brenner, the celebrated African traveller, which took place at Zanzibar on March 22.

IN a pamphlet on "Agricultural Schools and Experimental Farms" (Blackwood), Mr. David Milne Home points out very forcibly how immensely far behind all the rest of the world is this country, so far as the teaching and practice of scientific agriculture is concerned. For many years, in Germany and Austria, institutions supported by the state have been at work, not only for giving those who intend to follow agriculture as a vocation a thorough education in the scientific principles of that art, but also for scientific education in the principles and materiel of agriculture in all its branches. Other continental countries are following the example of Germany and Austria, and, more recently, numerous institutions of a similar kind, partly aided by Government, have been established on the best models in the United States. The consequence is that Britain is being out-distanced in a department which used to be deemed peculiarly British; and the only means by which she can regain and keep her place as an agricultural country is by getting Government to take the initiative in founding agricultural institutions similar to those of the countries we have named. "Every civilised country except Britain," Mr. Milne Home tells us, "has its Minister of Agriculture, to look after and promote its agricultural interests."

M. GAUTHIER VILLARS will publish very shortly the 10th volume of the "Annals of the Observatory." This is almost exclusively occupied with a paper by M. Leverrier On the Mutual Actions of Jupiter and Saturn; a paper by MM. Wolf and André, On the black drop, has been reprinted from *Memoirs* of the Academy, and annexed to it. Tome XI. contains a paper On a special theory of Jupiter and Saturn, and secular inequalities; it will also be published very shortly. Tome XII. is nearly all printed; it contains the tables of Jupiter, reduced from M. Leverrier's theory. All the numerical results were obtained at the Bureau de Calculs of the Observatory. The positions of Jupiter were taken from these for 1878 and 1879, and sent to Mr. Hind for publication in the *Nautical Almanac.* It will contain also a paper by M. Rayet, On Magnetical Observations, which have been taken at the Observatory during these last two centuries.

THE *Times* New South Wales Correspondent writes that an explanation of the fate of the lost Australian explorer Leichhardt has been offered, which, however, is considered very unsatisfactory. The Leichhardt expedition set out in 1844 and never returned. Andrew Hume, who was despatched by the Sydney Government in 1872, to recover some relics of the expedition has returned, and reports that he found Classen, Leichhardt's second in command, living with the blacks at the head of the waters of Stewart's Creek; Classen, Hume says, is detained by the blacks as a sort of wonder-man. Classen, according to Hume, states that Leichhardt's party mutinied at the head of Victoria River, and that after the struggle with their leader they left him when pushing on to the north-west coast. During this affair Classen was always seeking for water. When he returned, he says that Leichhardt was insensible, and died five days after the mutiny. The camp had been broken up and the horses taken away by the men. Hume says that he possessed himself of Leichhardt's quadrant and watch, and about seventy-five pages of the traveller's records. He also affirms that he saw the remains of the dead man concealed in a tree. The mutineers, he reports, were all killed at Ayer's Creek. Hume, it seems, has not shown to any one the relics he says he has recovered, and his story, as we have said, is generally discredited. Leichhardt's last letter is dated "Darling Downs, February 22, 1848."

IN a report on the trade of Tamsay, China, we are told that the Camphor trees (*Cinnamomum camphora* F. Nees et Eberm.) are not found within the district marked on maps of Formosa as Chinese territory. They occur only within the country of the aborigines, or upon the immediate border. The manufacture of camphor necessitates the destruction of the trees, which are never replanted; as the country becomes denuded the aborigines recede, and the Chinese effect a corresponding encroachment. As a consequence, the border country is in a continuous state of disturbance, and fearful outrages are committed by both sides on every opportunity.

A PETITION signed by twenty-six Professors in the Universities of Scotland has been presented to the Prime Minister, calling his attention to the treatment of the ladies admitted to matriculate as students of medicine in the University of Edinburgh, and afterwards refused the right to graduate, and urging the Government to take the whole subject of the University education of women into consideration, with the view of devising a remedy for the present anomalies.

THE General Local Committee which has been formed in Belfast for the purpose of making arrangements for the ensuing meeting of the British Association is already busy at work, and 3,000*l*. is being raised for the purpose of giving a proper reception to the Association: of this amount upwards of 1,600*l*. has already been collected. It has been arranged to prepare a list of lodgings for members who might not be otherwise accommodated, and other details are being attended to with regard to excursions, &c. The business meetings of the Association will be held in the Queen's College.

MR. J. H. LEWIS of Liverpool proposes to issue twenty sets of British Rubi, if names of subscribers are to hand by June 1. Each set will contain examples of twenty forms. Each example will show two flowering shoots—in flower and in fruit—and two pieces of barren shoot—young and old. In gathering, avoidance will be given to hedgerow-clipped plants, and preference shown, in this fasciculus, to those that exhibit characters corresponding to Prof. Babington's species and varieties, as described in "British Rubi," 1869. Printed tickets will be given containing remarks on most of the forms by Prof. Babington, Rev. A. Bloxam, Mr. Baker, and Hon. J. L. Warren. If encouragement be given to this fasciculus, others will be issued having more regard to intermediate and dubious forms. The price will be 1*l*. per set.

DR. J. E. GRAY has expressed his opinion that so far as he can judge from the description and drawing of the whale taken off Otago Head, New Zealand, in October last, it is a specimen of *Neobalæna*, of which only the skull has been known before. He established the genus *Neobalæna* from drawings of a skull in the museum at Wellington, which had been found at the island of Kawan, and in the An. and Mag. of Nat. Hist., vol vi. p. 156, he wrote, "the difference in skull makes us anxious to have a description of the entire animal and its skeleton, as the animal may prove to be the type of a new family of whales between the true whales and finners." This capture affords an opportunity for the first time of examining an entire skeleton, and a description is promised by Dr. Gray. The measurements taken by Prof. F. W. Hutton, of the Otago Museum, Dunedin, gave the length 16 ft. 2½ in., girth at pectoral 10 ft., pectoral flipper 2 ft. 7 in. long, caudal flipper 1 ft. 6 in. Weight 27 cwt.

THE recently issued number of the *Bulletin* of the Geological Society of France contains an abstract of a paper On a Comparison of the Inferior Eocene of the Basins of Paris, Belgium, and England. The paper will appear in full in the fourth volume of the *Annales des Sciences Géologiques*. The correlation adopted is as follows:—

PARIS BASIN.	BELGIUM.	ENGLAND.
Sables à nummulites planulata	Panisálien	Lower Bagshot sands
Sables sans fossiles	Yprésien supérieur	
Gap	Argile d'Ypres	London clay
Gap	(?)	Oldhaven beds
Argile plastique	Landénien supérieur	Woolwich beds
Sables de Bracheux	Landênien inférieur	Thanet sands

In the same bulletin M. Pouech describes an incomplete humerus, a fragmentary maxilla, and a molar belonging to *Elephas primigenius*, found by him in the ravine of Vicaria, near Pamiers. He believes it to have been contemporaneous with the Troglodytes of Vezère, d'Aurignac, and Clermont. There is also a description by M. Gaudry of the anterior part of the head of *Anthracotherium* found at St. Menoux. A full-size drawing is given showing the teeth of the upper and lower jaws interlocking.

M. DE BILLY, who had been appointed president of the French Alpine Club, has been killed by a railway accident, even before his nomination was notified to him. M. Cezane, an engineer of the Ponts et Chaussès, and one of the most promising members of the National Assembly, has been appointed to fill the vacancy created by the unexpected demise of the learned gentleman. M. Cezane is one of the members for the department of Hautes-Alpes; he has written an admirable work on the "Degradation of Mountains by Waterfalls."

M. A. FOUQUÉ will deliver, at the College de France, a series of lectures on the volcanic emanations of Etna, Sautorin, and Açores, where he has been sent by the French Academy to report upon these most interesting phenomena.

THE French Association for the Advancement of Science has voted to M. W. de Fonvielle a sum in order to encourage him to recommence his course of systematic balloon ascents. M. de Fonvielle intends to study the differential direction which it is possible to give to an aërostat in varying the altitude for taking advantage of several directions of winds. It is not known yet whether he will practise his method for travelling in Europe or in America.

THE eighth number of Mr. Hermann Strecker's work on the Lepidoptera has just been published by him at Reading, Pennsylvania, and upon a closely filled plate are to be found illustrations of eight species of butterflies, one of them but recently described as new by Mr. Strecker.

THE annual report of the Academy of Sciences of Philadelphia announces the final completion of the labour upon which Mr.

Tryon and his associates have been engaged for several years past, namely, the arranging, labelling, and mounting of a very extensive collection of shells belonging to the Academy. The total number by actual count is 14,161 species, in something less than 100,000 specimens. The collection is stated to be one of the finest extant.

THE Cambridge Natural Science Club held six meetings during the past Lent term; there are now fourteen members Undergraduates and Bachelors, nearly all of whom were in residence and attended regularly, often bringing friends as visitors. The following were the subjects discussed:—Climbing Plants, introduced by Mr. Stone, St. Peters; the Functions of the Cerebral Hemispheres, introduced by Mr. Bridge, Trinity; Precious Stones, a paper by Mr. Alfred Buxton, Trinity; Zoological Colonies, a paper by Mr. A. J. Jukes Brown, St. John's; Metamorphosis, a paper by Mr. A. M. Marshall, St. John's; Allotropism, a paper by Mr. C. P. Clough, St. John's. The meetings commence again on Saturday the 25th inst., and will be continued during the present term, and through the Long Vacation, should a sufficient number of members be in residence.

AT the last monthly meeting of the Manchester Geological Society, Mr. Plant exhibited a large collection of remains of *Bos priscus* and *Rangifer*, obtained from Castleton, Derbyshire. The largest bones were portions of the skull, with the horn-cones attached, femora, and vertebræ, all much incrusted.

THE additions to the Zoological Society's Gardens during the last week include a Common Crowned Pigeon (*Goura coronata*), hatched in the Gardens; a Prince Alfred's Deer (*Cervus alfredi*) and a Vulpine Phalanger (*Phalangista vulpina*), born in the Gardens; and a Great Kangaroo (*Macropus giganteus*) from Australia, deposited.

THE METEOROLOGICAL CONGRESS AT VIENNA *

THE Meteorological Congress, which held its meetings in Vienna from the 2nd to the 16th of September last, had its origin in a wide-spread conviction that since meteorology can be prosecuted with success only when it is treated internationally, uniformity of procedure among different nations is indispensable; and it was to bring about this uniformity that the Congress was convened. A preliminary Conference was held at Leipsig in August 1872, for the purpose of preparing the programme for the Congress. The Austrian Government issued invitations to other Governments to send delegates to the Congress. To these invitations every European country, except France, responded, and the United States and China were also represented.

The questions which were discussed, and the names of the delegates, have already appeared in NATURE.† The following is the deliverance of the Congress on these questions:—

1. A decision regarding the best mercurial barometer for stations of the second order was postponed to a future Congress. Aneroids should not be employed at stations where there is no other barometer, but they may be used as interpolation instruments alongside the barometer.

2. It was considered impossible to lay down fixed rules for general adoption in the protection of thermometers, on the ground that regard must be had to local conditions, and that the mode of exposure which is most to be recommended, in a space which is open and accessible to all winds, and at a height of 4½ to 6 ft., cannot be used everywhere.

3. Casella's minimum, and Hermann and Pfister's metallic thermometer, since they are found to become frequently deranged, cannot be recommended for stations at which they cannot be kept in proper order and their errors ascertained. For minimum thermometers, amyl-alcohol is to be preferred to ordinary alcohol, as being less liable to distillation. It is recommended that maximum and minimum thermometers be read at the last observation of the evening, and entered on the day on which they are taken.

4. Reference having been made to the experiments on radiation by Symons, Stow, and Soret, further experiments were recommended to be undertaken by physicists, so that the subject might be brought into the sphere of the regular observations.

5. Lamont's method of observing earth temperatures, which consists of a wooden tube, to the bottom of which the thermometer is let down, and up which it is drawn in order to be read, was recommended as giving more trustworthy results than thermometers with long tubes fixed in the ground. New experiments should be made in different countries, in order to decide the question at what depths observations should be taken.

6. The use of the wet- and dry-bulb hygrometer is in the meantime recommended, and the attention of physicists is drawn to the invention of some new apparatus by which the humidity of the air may be more accurately determined. Hair hygrometers can only be used with safety where care is taken to have their indications compared with those of the wet- and dry-bulb hygrometer, so as to determine their corrections, especially near the point of saturation, where the readings are often too low.

7. It was agreed to introduce the English designations of the directions of the wind:—N. = North, E. = East, S. = South, and W. = West, and to give only sixteen directions of the wind; and in the case of intermediate directions being observed, it is proposed to count them alternately to the one or the other. Lambert's formula is not to be recommended in deducing the mean direction of the wind; but, on the other hand, the frequency and mean force of the winds which correspond to the different directions should be given in numbers. In the distribution in the windrose, those winds whose velocity is less than ½ metre per second, or 2½ English miles per hour, are not to be regarded, but counted as calms. The direction of the cloud-drift should be observed and noted.

8. No general scale for the estimation of wind-force is yet recommended, but it is desirable that a gradual advance be made towards giving the velocity of the wind in metres per second.

9. Wild's apparatus for measuring the force of the wind, already in use in Switzerland, Baden, and Russia, was recommended for introduction at stations of the second order. The velocity of the wind obtained by anemometers should be expressed in metres per second, and tables should be prepared for the mutual conversion of metres per second, kilometres per hour, and English miles per hour.

10. The best form for the receiver of the rain-gauge is a circular one with the area of one-tenth of a square metre, that is, having a diameter of about 14 in. The receiver of the rain-gauge should be placed at a height of not less than 1, and better, of 1½ metres above the ground, or at a height of from 3 to 4½ ft. In the published results the height above the ground should be stated. Where it can be done, the measurement of the rainfall should be at the end of the fall; in other cases the first observing hour of the day is recommended, in which case the amount is to be put down to the previous day. It is recommended that the duration of the fall be stated in hours.

11. It was agreed to introduce symbols for the character of the precipitation in the "Remarks" column, and to give in the monthly *résumé* the sum of the days of rain and snow separately; to have two columns, one for the quantity fallen, and one for the depth of the unmelted snow; and to give, in the yearly *résumé*, the maximum fall in twenty-four hours for each month. It was further recommended to state the number of days when the fall is less than 0·04 in. and 0·01 in.

12. Hail is defined to be as a precipitation of frozen water, in which the stones attain such a size that they may be expected to do damage to agricultural products.

13. (*a*) In order to obtain data regarding thunderstorms which admit better of comparison, it is recommended only to count the days of thunderstorms, but this is not intended to prevent individual observers from inserting in the column of "remarks," in addition, the number of the storms, the time of their commencement, their duration, direction of motion, &c.

(*b*) As days of thunderstorm, only those are to be noted on which both lightning and thunder have been observed. If only lightning without thunder has been noticed, the entry for the day should be sheet lightning.

14. As regards evaporation, the evaporating dish should not be less than seven inches in diameter, and it is indispensable that it be absolutely identical as regards diameter and depth at

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* "Report of the Proceedings of the Meteorological Congress at Vienna." Protocols and Appendices. Translated from the Official Report. Published by the authority of the Meteorological Committee. London, 1874.

† NATURE, vol. viii. p. 468.